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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/036,505

01/07/2002

Jeong Yeal Kim

025311-0113

5148

22428

7590

03/29/2004

FOLEY AND LARDNER

SUITE 500

3000 K STREET NW

WASHINGTON, DC 20007

EXAMINER

COURSON, TANIA C

ART UNIT

PAPER NUMBER

2859

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/036,505

Applicant(s)

KIM, JEONG YEAL

Examiner

Tania C. Courson

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07JUL03(Fig.1) & 07JAN02 (figs.2-9) is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>07NOV03</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Cheng (US 5,546,179).

Cheng discloses in Figures 1-8, an apparatus and method for mapping the edge of a workpiece comprising:

With respect to claim 1:

- a) an optical section (Fig. 1, optical sensor device 24) for radiating exposure light toward the edge of a semiconductor wafer (Fig. 1);
- b) a sensor (Fig. 1, optical sensor device 24) for detecting the height of the edge (Fig. 1), and;
- c) a focus position control mechanism (Fig. 1, focus position control system 46 and column 8, lines 10-39) for controlling the focal position of exposure light originating from the optical section on the basis of value detected by the sensor (Fig. 1).

With respect to claim 2:

- a) the sensor includes a focal sensor (Fig. 1, optical sensor device 24 and column 8, lines 10-39) for sensing a distance between the optical section and the edge (Fig. 1), and;
- b) the focus position control mechanism controls a focusing position of exposure light (Fig. 1, optical sensor device 24 and column 8, lines 10-39) such that the focus of exposure light originating from the optical section matches the height of an edge surface (Fig. 1).

With respect to claim 3:

- a) wherein the focus position control mechanism includes a position control mechanism (Fig. 1, optical sensor device 24 and column 8, lines 10-39) for controlling a relative position between the optical section and the edge (Fig. 1).

With respect to claim 4:

- a) wherein the focus position control mechanism includes a zooming mechanism (Fig. 1, optical sensor device 24 and column 8, lines 10-39) for controlling the focal distance of the exposure light originating from the optical section (Fig. 1).

With respect to claim 9:

- a) a chuck (Fig. 1, chuck 16) for retaining the semiconductor wafer thereon (Fig. 1), and;

- b) a drive (Fig. 1, support shaft 18 and motor 20) for rotating the chuck so that the radiating exposure light irradiates only on an annular portion of the edge (Fig. 1).

With respect to method claims 5-8 and 10: The method steps claimed will be met during the normal operation of the apparatus stated above.

### ***Response to Arguments***

3. Applicant's arguments filed December 18, 2003 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Cheng (US 5,546,179).

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art cited on PTO-892 and not mentioned above disclose periphery exposing devices and methods:

Luxem (US 6,611,345 B1)

Phillips (US 4,383,757)

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tania C. Courson whose telephone number is (571) 272-2239. The examiner can normally be reached on Monday-Friday from 8:00AM to 4:30PM.

Art Unit: 2859

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached on (571) 272-2245.

The fax number for this Organization where this application or proceeding is assigned is (703) 872-9306.



DIEGO F.F. GUTIERREZ  
SUPERVISORY PATENT EXAMINER  
GROUP ART UNIT 2859

TCC  
March 22, 2004